National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation L-09R-620A

Date: February 12, 1990

In reply refer to: R-89-78
and R-89-79

Mr. Gerald Grinstein
President and Chief Executive Officer
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About 4:30 a.m. mountain standard time on February 2, 1989, freight cars from Montana Rail Link Inc. (MRL) westbound train 1-121-28 (train 121) rolled eastward down a mountain grade and struck a stopped helper locomotive consist, Helper 1, in Helena, Montana. The locomotive consist of train 121 included three helper units (Helper 2) and three road units positioned at the head end of a 49-car train. The crewmembers of train 121 had uncoupled the locomotive units from the train to rearrange the locomotive consist while stopped on a mountain grade. In the collision and derailment, 15 cars from train 121 derailed, including 3 tank cars containing hydrogen peroxide, isopropyl alcohol, and acetone. Hazardous material released in the accident later resulted in a fire and explosions. About 3,500 residents of Helena were evacuated. Two crewmembers of Helper 1 were only slightly injured. The estimated damage (including clean-up and lading) as a result of this accident exceeded $6 million.[1]

The National Transportation Safety Board determined that the probable cause of this accident was the failure of the crew of train 1-121-28 to properly secure their train by placing the train brakes in emergency and applying hand brakes when it was left standing unattended on a mountain grade. Contributing to the accident was the decision of the engineer of Helper 2 to rearrange the locomotive consist and leave the train unattended on the mountain grade, and the effects of the extreme cold weather on the airbrake system of the train and the crewmembers. Also contributing was the

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[1] For more detailed information, read Railroad Accident Report--"Collision and Derailment of Montana Rail Link Freight Train with Locomotive Units, and Hazardous Materials Release at Helena, Montana, February 2, 1989." (NTSB/RAR-89/05)

failure of the operating management of the Montana Rail Link to adequately assess the qualifications and training of employees placed in train service. Contributing to the severity of the accident was the release and ignition of hazardous materials.

Both BN and MRL operating officers conducted efficiency tests of MRL train crews operating between Helen Jct. and Phosphate. MRL records showed that no efficiency tests were performed on either the engineer or the UOE of Helper 2 during the 6-month testing period prior to the accident; however, the engineer had been a trainmaster during the first 3 months of the testing period and was not subject to efficiency testing. The engineer, assistant engineer, and UOE of the road power had each been individually tested on at least three occasions during this period, but only the engineer had been tested on the airbrake rules from the group "B" category for rules 219 through 224. Further, the road power UOE was working as an engineer when the efficiency tests were made on him, but he had not been tested on any airbrake rules.

Since the beginning of MRL's operation in 1987, BN operating officers conducted only 13 efficiency tests of MRL train crews operating between Helena Jct. and Phosphate over BN trackage, or less than one test per month. Such infrequent testing cannot result in any meaningful evaluation of rules compliance by operating personnel. The Safety Board believes that the BN and MRL need to establish and implement procedures to improve their testing for rules compliance when MRL train crews are operating over BN trackage.

Under Federal regulations a carrier is not to accept a non-complying shipment (for example a shipment not packaged or labeled in accordance with the regulations) of hazardous material for transportation and is required to check the shipping papers and placards at interchange for accuracy. Because train crews are responsible for the placement and location of hazardous material cars within the train, they must check the product identification number on the DOT placard against that on the waybill to carry out their duties. If this had been done at Laurel, it would have been noted that the waybill for UTLX 820 was not consistent with the placards on the tank car and this conflict could have been corrected.

Because these cars were not of immediate concern, the lack of a waybill for ACDX 816007 and the inaccurate data on the waybill for ATSF 621566 did not become an issue in the emergency. Emergency response actions taken because of the isopropyl alcohol in UTLX 820 were also appropriate for the acetone since both are flammable liquids. Therefore, the fact that the waybill for UTLX 820 did not indicate the tank car contained acetone was not sufficient to lead the fire department to take inappropriate response measures, but may have lead firefighters to falsely believe that the tank car released its entire lading. Since the waybills are also used to generate the consist, any errors in the waybills will be carried over to the consist as was the case in this accident. The accuracy of the consist was further compromised by the failure to list the first car behind the locomotive.

The missing and inaccurate waybills and consist did not directly affect the ability of the fire department to identify those cars and commodities involved in the derailment and fire. However, inaccurate or the lack of sufficient information can be of critical importance, particularly if the faulty information relates to cars directly involved in the accident.

The MRL superintendent stated that as far as he was aware inaccurate waybills received from other carriers are an infrequent occurrence. However, he also stated that the inaccurate waybills for UTLX 820 and ATSF 621566 were discovered only because of the accident. It is apparent that there is no system by which such errors would be detected without an accident. This suggests that MRL has no means to determine the magnitude of the problem. The accuracy of a waybill depends on the accuracy and completeness of the information provided by a shipper and the attention of the originating carrier to properly enter this information on the waybill. Although the MRL officials stated that they had discussed inaccurate waybill information for hazardous materials cars with the AAR and the BN, the problem still persists. Without making a systematic periodic effort to verify the accuracy of waybills received from other carriers or shippers, there is little opportunity to know how prevalent the problem may be. Had this accident not occurred, the MRL would have never known about the inaccurate waybills. Inaccurate waybills or the lack of sufficient information can be of critical importance, particularly if the information relates to cars directly involved in an accident. The Safety Board believes that BN and MRL need to develop and implement procedures to verify the accuracy and completeness of hazardous material shipping documentation for cars received at interchange from other carriers or shippers.

Therefore, the National Transportation Safety Board recommends that the Burlington Northern Railroad Company:

> Improve the efficiency testing procedures and provide training on Burlington Northern (BN) operating rules for Montana Rail Link train crews when operating over BN trackage. (Class II, Priority Action) (R-89-78)
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> Develop and implement procedures to verify the accuracy and completeness of hazardous material shipping documentation for cars received at interchange from other carriers or shippers. (Class II, Priority Action) (R-89-79)

Also as a result of its investigation of this accident, the Safety Board issued Safety Recommendations R-89-68 through R-89-77 to Montana Rail Link, Inc., R-89-80 to the Secretary of the U.S. Department of Transportation, R-89-81 and R-89-82 to the Federal Railroad Administration, R-89-83 to the Research and Special Programs Administration, R-89-84 through R-89-87 to the City of Helena, R-89-88 to the State of Montana, R-89-89 to the Lewis and Clark County Disaster and Emergency Services, and R-89-90 through R-89-92 to the Association of American Railroads.

The National Transportation Safety Board is an independent Federal agency with the statutory responsibility "...to promote transportation safety by conducting independent accident investigations and by formulating safety improvement recommendations...."(Public Law 93-633). The Safety Board is vitally interested in any actions taken as a result of its safety recommendations and would appreciate a response from you regarding action taken or contemplated with respect to the recommendations in this letter. Please refer to Safety Recommendations R-89-78 and R-89-79 in your reply.

KOLSTAD, Acting Chairman, and BURNETT, LAUBER, NALL, and DICKINSON, Members, concurred in these recommendations.

By: James L. Kolstad
Acting Chairman